

REMARKS/ARGUMENTS

In previous responses, the Applicant canceled Claims 1-28 and 30-33 without prejudice or disclaimer, and added Claims 36-40. In the present response, the Applicant has amended Claim 29 and added Claim 41. Support for the amendment can be found, *e.g.*, in paragraphs 21-23 and Figures 7-9 of the published application (U.S. Patent Application Publication No. 20040195684). Accordingly, Claims 29 and 34-41 are currently pending in the application.

I. Rejection of Claims 29, 35-37, and 40 under 35 U.S.C. §103

The Examiner has rejected Claims 29, 35-37, and 40 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,421,012 to Heckaman ("Heckaman") in view of U.S. Patent No. 6,309,914 to Huang, *et al.* ("Huang"). The Applicant believes the invention as presently claimed, however, is neither shown nor suggested in the cited combination of Heckaman and Huang. More specifically, the Applicant fails to find where the cited combination teaches or suggests a dielectric layer having opposing first and second major surfaces and having a plurality of openings extending between the first and second opposing major surfaces, the first surface separated from an underlying semiconductor substrate by an etchant conducted through the openings as recited in now amended independent Claim 29.

The Examiner recognizes that Heckaman does not explicitly teach that there are openings extending between a first and second major surface of a dielectric layer and cites elements 51 and 61 of Figure 9 of Huang to cure this deficiency. (*See* Examiner's Action of January 23, 2008, page 3.) Figure 9 of Huang teaches a singulated BGA substrate 20' is placed on top of a lower mold 6' which has a plurality of posts 61' defining a receiving area for receiving the substrate 20' therein.

Thereafter a separator 5' with a plurality of holes 51' corresponding to the plurality of posts 61' of the lower mold 6' is mounted on the singulated BGA substrate 20' by inserting the posts 61' into the corresponding through holes 51' respectively. After a transfer molding process is completed, excess molding compound 91' is removed from the separator 5' and the separator 5' is removed from the singulated BGA substrate 20'. (*See, e.g.*, column 6, lines 42-67, and Figures 9-10.) Thus, Huang teaches holes 51' in separator 5' are used to align the separator 5' over posts 61' in a lower mold 6'. Huang does not teach or suggest the holes are used to conduct an etchant to separate the separator from a semiconductor substrate underneath. As such, Huang does not teach or suggest every element of presently amended independent Claim 29.

Furthermore, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time of the invention to include openings in the dielectric layer taught by Heckaman and insert underlying posts into those openings as taught by Huang for the purpose of securely positioning the two layers on top of each other as to prevent possible misplacement. (*See* Examiner's Action of January 23, 2008, page 3.) The Applicant assumes the positioning and placement the Examiner is concerned with involves ensuring the secondary substrate 156 with parasitic patch antenna elements 160 is properly aligned with and securely placed over the polarization circuits 162 formed on the backside of primary substrate 154.

Heckaman teaches that spherical balls 158 space apart the primary substrate 154 from the secondary substrate 156. (*See, e.g.*, column 7, lines 59-62, column 6, lines 34-38, and Figures 8-9 and 15-18 of Heckaman.) Figures 15 and 16 of Heckaman appear to show that the spherical balls 84 are attached to the two substrates 110 and 80 to secure them together. Thus, Heckaman already teaches that the spherical balls 158 securely attach the primary substrate 154 and the secondary

substrate 156 together. As such, there is no reason one of ordinary skill in the art at the time of the invention would need the posts 61' and holes '51 of Huang to securely attach the primary substrate 154 to the secondary substrate 156 of Heckaman as the Examiner applies.

From the depiction of the secondary substrate 156 and primary substrate 154 in Figures 8-10 of Heckaman, one of ordinary skill in the art at the time of the invention would align the edges/corners of the these substrates to line the parasitic patch antenna elements 160 and the polarization circuits 162 over each other, since the location of the antenna elements and polarization circuits are fixed relative to the edges/corners of their respective substrate. As such, there is no need for any further alignment, particularly that which would include the cost and complexity of the posts 61' and holes 51' of Huang. Thus, there is no reason one of ordinary skill in the art at the time of the invention to use Huang to secure and/or align the substrates of Heckman when Heckman already provides, as established above, such securing and alignment.

For at least the reasons given above, the cited combination of Heckman and Huang, as applied by the Examiner, does not provide a *prima facie* case of obviousness for presently amended independent Claim 29 and Claims that depend thereon. Accordingly, the Applicant respectfully requests the Examiner to withdraw the §103(a) rejection of Claims 29, 35-37, and 40 and allow issuance of the pending claims.

II. Rejection of Claims 34 and 38-39 under 35 U.S.C. §103

The Examiner has rejected Claims 34 and 38-39 under 35 U.S.C. §103(a) as being unpatentable over Heckaman in view of Huang and further in view of the following: U.S. Patent No. 4,482,445 to Fjelstad ("Fjelstad") for dependent Claim 34; and U.S. Patent No. 5,269,880 to Jolly, et

al. ("Jolly") for dependent Claims 38-39. As established above, the cited combination of Heckaman and Huang does not provide a *prima facie* case of obviousness for presently amended independent Claim 29. Neither Fjelstad nor Jolly has been cited to cure the above-noted deficiencies of the cited combination of Heckaman and Huang but to teach the subject matter of the above-cited dependent claims. Thus, the cited combination of Heckaman and with Huang with either Fjelstad or Jolly does not provide a *prima facie* case of obviousness for independent Claim 29 and Claims that depend thereon. Accordingly, Claims 34 and 38-39 are not unpatentable in view of the cited combinations and the Applicant respectfully requests the Examiner to withdraw the §103(a) rejection of Claims 34 and 38-39 and allow issuance of the pending claims.

III. Conclusion

In view of the foregoing amendment and remarks, the Applicant now sees all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a timely Notice of Allowance for Claims 29, 34-41.

The Applicant requests the Examiner to telephone the undersigned agent of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

HITT GAINES, P.C.

A handwritten signature in black ink, reading "Steven J. Hanke". The signature is written in a cursive, flowing style.

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